

What is claimed is:

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DAI
1. A method for hands free voice communications using a PDA comprising:
sensing a bone conduction signal from a bone conduction sensor disposed within an external auditory canal of a user;
transmitting the sensed bone conduction signal from a transmitter to a PDA; and
processing the sensed bone conduction signal at the PDA to create a processed audio signal.
 2. The method of claim 1 wherein the bone conductor sensor is fitted to the contours of a posterior superior wall of the external auditory canal.
 3. The method of claim 1 further comprising transmitting the processed audio signal from the PDA over a cellular transceiver.
 4. The method of claim 1 further comprising transmitting the processed audio signal from the PDA to a receiver disposed within an earpiece worn by the user; and sending the processed audio signal from the receiver to a speaker disposed within the earpiece.
 5. The method of claim 1 further comprising performing a voice recognition function using the processed signal.
 6. The method of claim 1 further comprising performing a voice activation function using the processed signal.

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7. A method for hands free voice communications using a PDA comprising:

sensing an air conduction signal from an air conduction sensor nonocclusively disposed within an external auditory canal of a user in a position proximate the posterior superior wall of the external auditory canal; transmitting the sensed air conduction signal from a transmitter located in an earpiece to a PDA; and processing the sensed air conduction signal at the PDA to create a processed audio signal.

8. The method of claim 7 further comprising transmitting the processed audio signal from the PDA over a cellular transceiver.

9. The method of claim 7 further comprising transmitting the processed audio signal from the PDA to a receiver disposed within an earpiece worn by the user; and sending the processed audio signal from the receiver to a speaker disposed within the earpiece.

10. The method of claim 7 further comprising performing a voice recognition function using the processed signal.

11. The method of claim 7 further comprising performing a voice activation function using the processed signal.

12. A method for hands free voice communications using a PDA comprising:

sensing an air conduction signal from an air conduction sensor nonocclusively disposed within an external auditory canal of a user;

sensing a bone conduction signal from a bone conduction sensor disposed within the external auditory canal of a user;

transmitting the air conduction signal and the bone conduction signal from a transmitter to a PDA; and processing the bone conduction signal and the air conduction signal at the PDA to create a processed audio signal.

13. The method of claim 12 wherein the air conduction sensor is in a position proximate the posterior superior wall of the external auditory canal.

14. The method of claim 12 wherein the bone conduction sensor is fitted to the contours of a posterior superior wall of the external auditory canal.

15. The method of claim 12 further comprising transmitting the processed audio signal from the PDA over a cellular transceiver.

16. The method of claim 12 further comprising transmitting the processed audio signal from the PDA to a receiver disposed within an earpiece worn by the user; and sending the processed audio signal from the receiver to a speaker disposed within the earpiece.

17. The method of claim 12 further comprising performing a voice recognition function using the processed signal.

18. The method of claim 12 further comprising performing a voice activation function using the processed signal.

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19. A system for hands free voice communication using the processing capabilities of a PDA comprising:
an earpiece housing;
an air conduction sensor adapted to be nonocclusively disposed within an external auditory canal of a user and operatively connected to the earpiece house and capable of transducing air conduction signals;
a bone conduction sensor adapted to be nonocclusively disposed within an external auditory canal of a user and operatively connected to the earpiece housing and capable of transducing bone conduction signals;
a transmitter operatively connected to the air conduction sensor and the bone conductor sensor and attached to the earpiece housing for transmitting the air conduction signals and the bone conduction signals;
a PDA having a processor adapted for processing audio signals; and
a receiver electrically connected to the PDA for receiving the air conduction signals and the bone conduction signals.

20. The system of claim 19 further comprising a cellular transceiver electrically connected to the PDA for transmitting processed audio signals.

21. The system of claim 19 further comprising a speaker attached to the earpiece housing; a second receiver attached to the earpiece housing and the speaker; and a second transmitter operatively connected to the PDA adapted to transmit the processed audio signals to the second receiver.